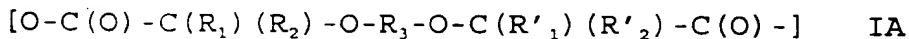
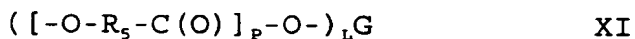


WE CLAIM:

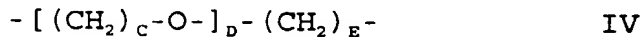
1. A method of preventing adhesion formation between tissues in an animal comprising placing a sterile adhesion prevention barrier between the tissues of the animal where the adhesion to be prevented wherein the sterile adhesion prevention barrier is formed from a polyoxaester having a first divalent repeating unit of formula IA:



and a second repeating unit selected from the group of formulas consisting of:

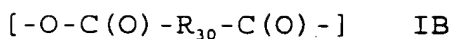


and combinations thereof wherein  $R_1$ ,  $R'_1$ ,  $R_2$  and  $R'_2$  are independently hydrogen or an alkyl group containing 1 to 8 carbon atoms;  $R_3$  is an alkylene unit containing from 2 to 12 carbon atoms or is an oxyalkylene group of the following formula:



wherein C is an integer in the range of from 2 to about 5, D is an integer in the range of from about 0 to about 2,000, and E is an integer in the range of from about 2 to about 5, except when D is zero, in which case E will be an integer from 2 to 12;  $R_4$  is an alkylene unit containing from 2 to 8 carbon atoms; A is an integer in the range of from 1 to 2,000;  $R_5$  is selected from the group consisting of - $C(R_6)(R_7)-$ ,  $-(CH_2)_3-O-$ ,  $-CH_2-CH_2-O-CH_2-$ ,  $-CR_8H-CH_2-$ ,  $-(CH_2)_5-$ ,  $-(CH_2)_F-O-C(O)-$  and  $-(CH_2)_F-C(O)-CH_2-$ ;  $R_6$  and  $R_7$  are independently hydrogen or an alkyl containing from 1 to 8 carbon atoms;  $R_8$  is hydrogen or methyl; F is an integer in the range of from 2 to 6; B is an integer in the range of from 1 to n such that the number average molecular weight of formula III is less than about 200,000;  $P$  is an integer in the range of from 1 to m such that the number average molecular weight of formula XI is less than about 1,000,000; G represents the residue minus from 1 to L hydrogen atoms from the hydroxyl groups of an alcohol previously containing from 1 to about 200 hydroxyl groups; and L is an integer from about 1 to about 200.

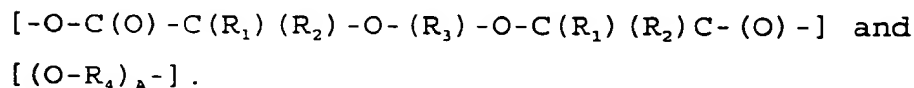
2. The method of claim 1 wherein additionally present is a third divalent repeating unit of the formula:



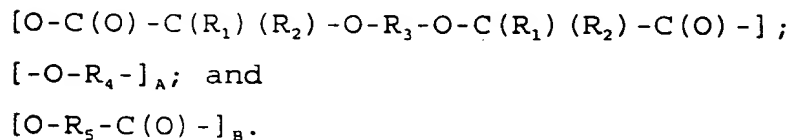
wherein  $R_{30}$  is an alkylene, arylene, arylalkylene, substituted alkylene, substituted arylene and substituted arylalkylene provided that  $R_{30}$  cannot be  $-[C(R_1)(R_2)]_{1-2}-O-(R_3)-O-[C(R'_1)(R'_2)]_{1-2}-$ .

3. The method of claim 1 wherein the number average molecular weight of formula III contained in the polyoxaester is less than 100,000.

4. The method of claim 1 wherein the aliphatic polyoxaester has the following repeating units:



5. The method of claim 1 wherein the aliphatic polyoxaester has the following repeating units:

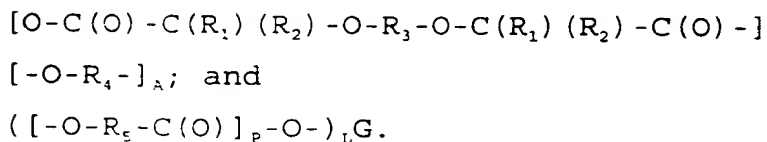


6. The method of claim 5 wherein  $R_3$  is an oxyalkylene group.

- 09780977-020901
7. The method of claim 6 wherein the first repeating unit is derived from a dicarboxylic acid selected from the group consisting of 3,6-dioxaoctanedioic acid, 3,6,9-trioxaundecanedioic acid and combinations thereof.
- 5
8. The method of claim 5 wherein the second repeating unit is derived from a diol selected from the group consisting of 1,2-ethandiol, 1,2-propandiol, 1,3-propandiol and combinations thereof.
- 10
9. The method of claim 5 wherein at least one of the second repeating unit is derived from ethylene glycol.
- 15
10. The method of claim 1 wherein at least one of the second repeating unit is derived from a lactone selected from the group consisting of glycolide, lactide,  $\epsilon$ -caprolactone and combinations thereof.
- 20
11. The method of claim 7 wherein the polyoxaester has two second repeating units wherein one of the second repeating units is a diol selected from the group consisting of 1,2-ethandiol, 1,2-propandiol, 1,3-propandiol and combinations thereof and the other repeating unit is a lactone selected from the
- 25

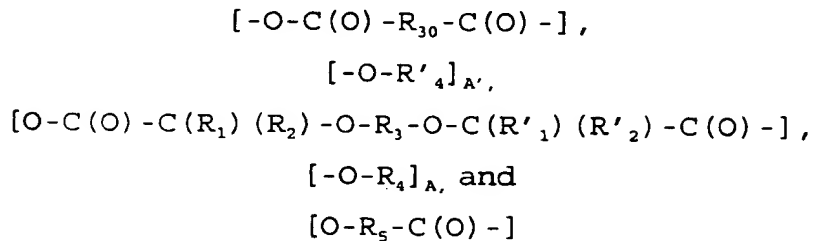
group consisting of glycolide, lactide,  $\epsilon$ -caprolactone and combinations thereof.

12. The method of claim 1 wherein the aliphatic  
5 polyoxaester has the following repeating units:



10

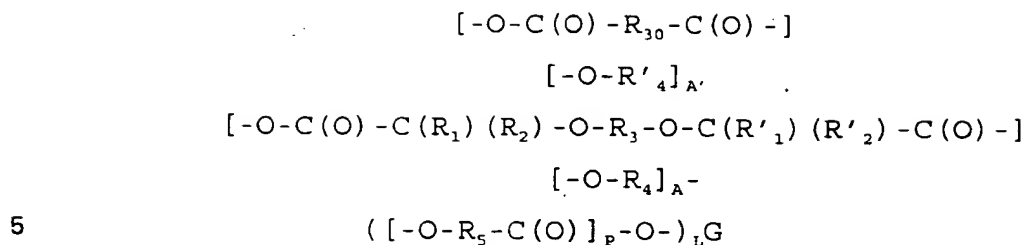
13. The method of claim 2 wherein the polyoxaester has  
the following repeating units:



15

20 wherein  $\text{R}_4$  and  $\text{R}'_4$  are independently selected from  
alkylene groups containing from 2 to 8 carbon atoms;  
A and A' are independently integers in the range of  
from 1 to about 2,000.

- 25 14. The method of claim 2 wherein the polyoxaester  
copolymer has the formula:



wherein  $R_4$  and  $R'_4$  are independently selected from alkylene groups containing from 2 to 8 carbon atoms; A and  $A'$  are independently integers in the range of from 1 to about 2,000.

15. The method of claim 1 wherein the polyoxaester copolymer is linked to one or more polymerizable regions.

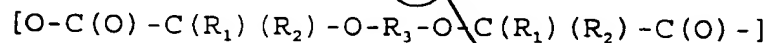
16. The method of claim 1 wherein the polyoxaester copolymer has been crosslinked.

17. The method of claim 16 wherein the polyoxaester copolymer has been crosslinked by the addition of a coupling agent.

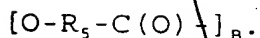
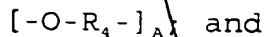
18. The method of claim 16 wherein the crosslinked polyoxaester copolymer has been contacted with water to form a hydrogel.

19. The method of claim 2 wherein the barrier is a film.

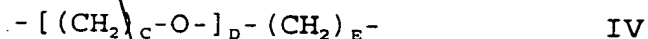
20. The method of claim 2 wherein the barrier is a foam.
21. The method of claim 2 wherein the barrier is a felt.
- 5 22. The method of claim 2 wherein the barrier is a gel.
23. The method of claim 2 wherein the barrier is a liquid.
- 10 24. The method of claim 1 wherein the polyoxaester is blended with a second polymer selected from the group consisting of homopolymer and copolymer of lactone type polymers with the repeating units described by formulas III and XI, aliphatic
- 15 polyurethanes, polyether polyurethanes, polyester polyurethanes, polyethylene copolymers, polyamides, polyvinyl alcohols, poly(ethylene oxide), polypropylene oxide, polyethylene glycol, polypropylene glycol, polytetramethylene oxide,
- 20 polyvinyl pyrrolidone, polyacrylamide, poly(hydroxy ethyl acrylate), poly(hydroxyethyl methacrylate), absorbable polyoxalates, absorbable polyanhydrides and combinations thereof.
- 25 25. A aliphatic polyoxaester having a first repeating unit of the formula:



and a second repeating units are



wherein  $R_1$ ,  $R'_1$ ,  $R_2$  and  $R'_2$  are independently hydrogen or an alkyl group containing 1 to 8 carbon atoms;  $R_3$  is an alkylene unit containing from 2 to 12 carbon atoms or is an oxyalkylene group of the following formula:



wherein C is an integer in the range of from 2 to about 5, D is an integer in the range of from about 0 to about 2,000, and E is an integer in the range of from about 2 to about 5, except when D is zero, in which case E will be an integer from 2 to 12;  $R_4$  is an alkylene unit containing from 2 to 8 carbon atoms; A is an integer in the range of from 1 to 2,000;  $R_5$  is selected from the group consisting of  $-C(R_6)(R_7)-$ ,  $-(CH_2)_3-O-$ ,  $-CH_2-CH_2-O-CH_2-$ ,  $-CR_8H-CH_2-$ ,  $-(CH_2)_5-$ ,  $-(CH_2)_F-O-C(O)-$  and  $-(CH_2)_F-C(O)-CH_2-$ ;  $R_6$  and  $R_7$  are independently hydrogen or an alkyl containing from 1 to 8 carbon atoms;  $R_8$  is hydrogen or methyl; F is an integer in the range of from 2



to 6; B is an integer in the range of from 1 to n such that the number average molecular weight of formula III is less than about 200,000.

- 5 26. The aliphatic polyoxaester of claim 25 wherein R<sub>1</sub> is an oxyalkylene group.
- 10 27. The aliphatic polyoxaester of claim 26 wherein the first repeating unit is derived from a dicarboxylic acid selected from the group consisting of 3,6-dioxaoctanedioic acid, 3,6,9-trioxaundecanedioic acid and combinations thereof.
- 15 28. The aliphatic polyoxaester of claim 25 wherein the second repeating unit is derived from a diol selected from the group consisting of 1,2-ethandiol, 1,2-propandiol, 1,3-propandiol and combinations thereof.
- 20 29. The aliphatic polyoxaester of claim 25 wherein the second repeating unit is derived from ethylene glycol.
- 25 30. The aliphatic polyoxaester of claim 25 wherein the second repeating unit is derived from a lactone selected from the group consisting of glycolide, lactide, ε-caprolactone and combinations thereof.

0978097 02001  
" 2608260

31. The aliphatic polyoxaester of claim 27 wherein the aliphatic polyoxaester has two second repeating units wherein one of the second repeating units is a diol selected from the group consisting of 1,2-ethandiol, 1,2-propandiol, 1,3-propandiol and combinations thereof and the other repeating unit is a lactone selected from the group consisting of glycolide, lactide,  $\epsilon$ -caprolactone and combinations thereof.

09780977 020904  
T06020 7608760